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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,750	07/31/2000	Takashi Hirano	09792909-0391	5303
26263	7590	07/27/2004	EXAMINER	
SONNENSCHN NATH & ROSENTHAL LLP			SANTIAGO, MARICELI	
P.O. BOX 061080			ART UNIT	
WACKER DRIVE STATION, SEARS TOWER			PAPER NUMBER	
CHICAGO, IL 60606-1080			2879	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/628,750

Applicant(s)

HIRANO ET AL.

Examiner

Mariceli Santiago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10,12,14-21,23,25-32,34,36-42,44 and 46-78 is/are pending in the application.
- 4a) Of the above claim(s) 51-78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,12,14-21,23,25-32,34,36-42,44 and 46-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 27, 2004 has been entered.

Response to Amendment

The Amendment, filed on May 27, 2004, has been entered and acknowledged by the Examiner.

Cancellation of claims 2, 4, 11, 13, 22, 24, 33, 35, 43 and 45 has been entered.

Claims 1, 3, 5-10, 12, 14-21, 23, 25-32, 33, 34, 36-42, 44 and 46-78 are pending in the instant application, claims 51-78 have been withdrawn as being drawn to a nonelected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5, 6, 9, 10, 12, 14, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizaki et al. (US 5,443,922).

Regarding claims 1 and 10, Nishizaki discloses an EL device comprising a substrate, an anode formed on the substrate, an organic light emitting layer formed on the anode, and a cathode (Column 52, lines 60-65) formed on the organic light emitting layer, wherein the anode includes a metal belonging to the group V or the group VI of the periodic table at least at a portion of the anode that is in contact with the organic light emitting layer (Column 53, lines 29-40). Nishizaki discloses an EL device wherein the anode was made from chromium material (Column 53, lines 29-40), which has a reflectance ranging between 67%-80%¹. It is elementary that mere recitation of a function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Accordingly, the examiner notes that the anode materials disclosed by Nishizaki intrinsically possess the reflectance property of 40% or higher.

Regarding claims 3 and 12, Nishizaki discloses an EL device wherein the work function of the metal is 4.8 eV or lower (Column 53, lines 29-40).

Regarding claims 5 and 14, Nishizaki discloses an EL device wherein emission light from the organic light-emitting layer is emitted from the side of the cathode (Column 53, lines 49-54).

Regarding claims 6 and 15, Nishizaki discloses an EL device wherein the anode comprises an alloy (Column 53, lines 29-40).

Regarding claims 9 and 18, Nishizaki discloses an EL device wherein the cathode comprises MgAg (Column 53, lines 41-48).

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizaki et al. (US 5,443,922) in view of Thompson et al. (US 5,861,219).

¹ Obtained from website <http://www.espimetals.com/>

Regarding claims 8 and 17, Nishizaki discloses the claimed invention except for the limitation of the cathode comprising a layer composed of a metal and a transparent material. However, in the same field of endeavor, Thompson discloses an organic EL device wherein the cathode is comprises a metal (MgAl) and a transparent material (ITO). The transparent material provides protection of the cathode from atmospheric oxidation and also function as an electrical contact layer. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the cathode materials disclosed by Thompson in the EL device of Nishizaki in order to provide a protection layer over the cathode from atmospheric oxidation and also function as an electrical contact layer.

Claims 19-21, 23, 25, 26, 29-32, 34, 36, 37, 40-42, 44, 46, 47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizaki et al. (US 5,443,922) in view of Ikeda (US 5,940,053).

Regarding claims 19 and 30, Nishizaki discloses an light emitting device having at least an organic light emitting layer, a first electrode providing holes to the organic light emitting layer and a second electrode providing electrons to the organic light emitting layer (Column 52, lines 60-65), wherein the first electrode contains a metal belonging to the group V or the group VI of the periodic table at least at a portion of the first electrode that is in contact with the organic light emitting layer (Column 53, lines 29-40). Nishizaki discloses an EL device wherein the anode was made from chromium material (Column 53, lines 29-40), which has a reflectance ranging between 67%-80%². It is elementary that mere recitation of a function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior

² Obtained from website <http://www.espimetals.com/>

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art. Accordingly, the examiner notes that the electrode materials disclosed by Nishizaki intrinsically possess the reflectance property of 40% or higher.

Nishizaki fails to disclose the driving and operating elements/components of the active matrix type EL device. However, Ikeda discloses an active matrix type EL device (Fig. 2, Column 5, lines 23-60) comprising scanning lines (151) for selecting pixels, data lines (152) provided with luminance information for driving the pixels, a first transistor (150) connected at a first control terminal with the scanning lines (151), a second transistor (156) connected at a second control terminal with the first transistor (150), and a light emitting device (155) connected with the second transistor (156). The driving elements and arrangement disclosed by Ikeda are considered well known in the art to provide and complete the assembly of an active matrix type EL device. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the driving and operating elements and arrangement disclosed by Ikeda in the EL device of Nishizaki in order to provide and complete the assembly of an active matrix type EL device.

Regarding claim 41, Nishizaki discloses an organic EL device having an anode containing a metal belonging to the group V or the group VI of the periodic table at least at a portion of the anode that is in contact with the organic light emitting layer (Column 53, lines 29-40), and a cathode disposed at a position opposing to the anode (Column 52, lines 60-65). Nishizaki discloses an EL device wherein the anode was made from chromium material (Column 53, lines 29-40), which has a reflectance ranging between 67%-80%³. It is elementary that mere recitation of a function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Accordingly, the examiner notes

³ Obtained from website <http://www.espi Metals.com/>

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that the anode materials disclosed by Nishizaki intrinsically possess the reflectance property of 40% or higher.

Nishizaki fails to disclose the driving and operating elements/components of the active matrix type EL device. However, Ikeda discloses an active matrix type EL device (Fig. 2, Column 5, lines 23-60) comprising scanning lines (151) for selecting pixels, data lines (152) disposed substantially vertically relative to the scanning lines (151) and provided with luminance information for driving the pixels, a active element (150) controlled by the scanning lines and having a function of receiving luminance information provided from the data lines and a second active element (156) having the function of controlling the current supplies to the EL device (155) in accordance with the received luminance information, the luminance information is taken into the pixels by applying electric signals in accordance with the luminance information to the data lines in a state where the data lines are selected, the luminance information taken in the pixel is maintained to the pixel even after the scanning line becomes no more selected, and the organic EL device maintains light emission at a luminance according to the luminance information (Column 5, lines 23-55). The driving elements and arrangement disclosed by Ikeda are considered well known in the art to provide and complete the assembly of an active matrix type EL device. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the driving and operating elements and arrangement disclosed by Ikeda in the EL device of Nishizaki in order to provide and complete the assembly of an active matrix type EL device.

Regarding claims 20, 31 and 42, Ikeda discloses an EL device wherein the first transistor (150) and the second transistor (156) are field effect transistors and connected at the second control terminal with a capacitor (153). Claims 20 and 31 are rejected for the same motivation stated above in the rejection of claims 19 and 30.

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Regarding claims 21 and 32, Ikeda discloses an EL device wherein the scanning lines (151) and the data lines (152) cross substantially vertical to each other (Fig. 2). Claims 21 and 32 are rejected for the same motivation stated above in the rejection of claims 19 and 30.

Regarding claims 23, 34 and 44, Nishizaki discloses an EL device wherein the work function of the metal is 4.8 eV or lower (Column 53, lines 29-40).

Regarding claims 25, 36 and 46, Nishizaki discloses an EL device wherein emission light from the organic light-emitting layer is emitted from the side of the cathode (Column 53, lines 49-54).

Regarding claims 26, 37 and 47, Nishizaki discloses an EL device wherein the anode comprises an alloy (Column 53, lines 29-40).

Regarding claims 29, 40 and 50, Nishizaki discloses an EL device wherein the cathode comprises MgAg (Column 53, lines 41-48).

Claims 28, 39 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizaki et al. (US 5,443,922) in view of Ikeda (US 5,940,053), and further in view of Thompson et al. (US 5,861,219).

Regarding claims 28, 39 and 49, Nishizaki discloses the claimed invention except for the limitation of the cathode comprising a layer composed of a metal and a transparent material. However, in the same field of endeavor, Thompson discloses an organic EL device wherein the cathode is comprises a metal (MgAl) and a transparent material (ITO). The transparent material provides protection of the cathode from atmospheric oxidation and also function as an electrical contact layer. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the cathode materials disclosed by Thompson in

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the EL device of Nishizaki in order to provide a protection layer over the cathode from atmospheric oxidation and also function as an electrical contact layer.

Claims 7, 16, 27, 38 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizaki et al. (US 5,443,922) in view of Inoue et al. (US 5,635,308).

Regarding claims 7, 16, 27, 38 and 48, Nishizaki discloses the claimed invention except for the limitation of the organic light-emitting layer having a hole transporting layer for transporting holes injected from the anode. However, in the same field of endeavor, Inoue exemplifies multiple EL device embodiments, including an EL device comprising an organic light emitting layer having the hole and electron injecting and transporting layers consisting of two sublayers, one sublayer having an injecting function and another sublayer having a transporting function, thus, the inclusion of a hole transporting layer facilitates the injection of holes from the anode and blocks electrons from the cathode. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the hole transporting layer disclosed by Inoue in the EL device of Nishizaki in order to facilitate the injection of holes from the anode and block electrons from the cathode.

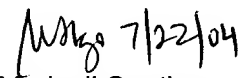
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mariceli Santiago
Patent Examiner
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